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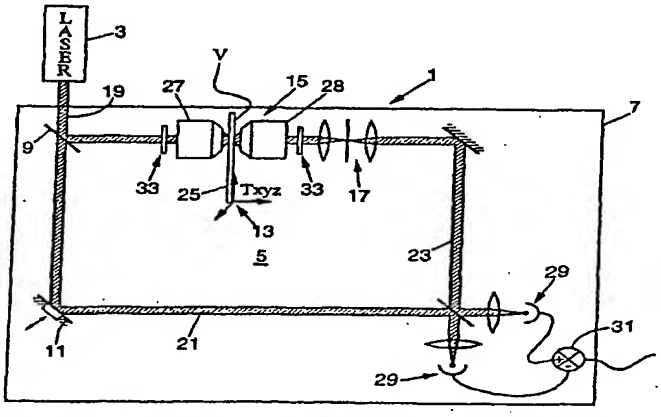
(54) Title: DEVICE AND METHOD FOR THE NON-INVASIVE DETECTION AND MEASUREMENT OF THE PROPERTIES OF A MEDIUM

(54) Titre : DISPOSITIF ET PROCEDE DE DETECTION ET DE MESURE NON INVASIVES DES PROPRIETES D'UN MILIEU



(57) Abstract: The invention relates to a device (1) which is used for the non-invasive detection of the properties of a medium by means of interferometry. The inventive device (1) comprises: an optical source (3) which is used to illuminate at least one zone of the medium that is to be probed (34) with a light beam (19); and an interferometer (5) which is used to split the light beam (19) into a reference beam (21) and a probe beam (23), said interferometer (5) having a cutoff frequency fc for the automatic control of the respective lengths of the reference beam (21) and the probe beam (23). The device (1) also comprises scanning means (33) which, together with the probe beam (23), are used to scan the zone to be probed (34) at a frequency f (frequency of the acquisition of images recorded by the means for measuring variations in the phase of the light beam (7)) greater than the cutoff frequency fc.

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For an explanation of the two-letter codes and the other abbreviations, reference is made to the explanations ("Guidance Notes on Codes and Abbreviations") at the beginning of each regular edition of the PCT Gazette.

(57) **Abrégé** : Dispositif (1) de détection non invasive des propriétés d'un milieu par interférométrie. Ce dispositif (1) comprend une source optique (3) pour éclairer au moins une zone à sonder (34) du milieu avec un faisceau lumineux (19), un interféromètre (5) pour diviser le faisceau lumineux (19) en un faisceau de référence (21) et un faisceau sonde (23), cet interféromètre (5) ayant une fréquence de coupure fc de l'asservissement des longueurs respectives du faisceau de référence (21) et du faisceau sonde (23). Ce dispositif (1) compote en outre des moyens de balayage (33) pour balayer, avec le faisceau sonde (23), la zone à sonder (34), à une fréquence f d'acquisition d'images enregistrées par les moyens de mesure des variations de la phase du faisceau lumineux (7), supérieure à la fréquence de coupure fc.